

WHAT IS CLAIMED IS:

1. A protective garment suitable for use by a fire fighter, said protective garment comprising:

an inner lining configured to cover a predetermined portion of a wearer's body, said inner lining being positioned so as to be adjacent said
5 wearer's body during use; and

an outer shell covering said inner lining, said outer shell being made from a fire resistant material, said outer shell being impregnated with a durable water resistant treatment, said durable water resistant treatment being incorporated into said outer
10 shell such that said outer shell maintains a spray rating of at least 80 after being laundered 20 laundry cycles and then pressed and maintains a water absorption rating of at least 8% after five laundry
15 cycles.

2. A protective garment as defined in claim 1, wherein said durable water resistant treatment comprises a fluorocarbon polymer.

3. A protective garment as defined in claim 1, wherein said outer shell maintains a water absorption rating of at least 6% after five laundry cycles.

4. A protective garment as defined in claim 1, wherein said durable water resistant treatment is incorporated into said outer shell such that said outer shell maintains a water absorption rating of at
5 least 4% after five laundry cycles.

5. A protective garment as defined in claim 1, wherein said outer shell is a woven fabric comprising polybenzimidazole and an aromatic polyamide polymer.

6. A protective garment as defined in claim 1, wherein said outer shell is made from an aramid polymer.

7. A protective garment as defined in claim 1, wherein said outer shell also maintains a dynamic water absorption rating of at least 18% after twenty laundry cycles.

8. A protective garment as defined in claim 1, wherein said outer shell weighs from about 6 ounces per square yard to about 10 ounces per square yard.

9. A protective garment as defined in claim 1, further comprising a thermal barrier layer positioned between said inner lining and said outer shell.

10. A protective garment suitable for use by a fire fighter, said protective garment comprising:

an inner lining configured to cover a predetermined portion of a wearer's body, said inner lining being positioned so as to be adjacent said
5 wearer's body during use;

an outer shell covering said inner lining, said outer shell comprising a woven fabric made from fire resistant yarns;

10 a thermal barrier layer positioned between said inner lining and said outer shell; and

a durable water resistant treatment impregnated into said outer shell, said durable water resistant treatment comprising a fluorocarbon polymer,
15 said durable water resistant treatment being incorporated into said outer shell such that said outer shell maintains a water absorption rating of at least 8% after five laundry cycles and a dynamic water absorption rating of at least 18% after twenty laundry
20 cycles.

11. A protective garment as defined in claim 10, wherein said durable water resistant treatment is incorporated into said outer shell such that said outer shell maintains a water absorption rating of at
5 least 4% after five laundry cycles and a dynamic water

absorption rating of at least 12% after twenty laundry cycles.

12. A protective garment as defined in claim 10, wherein said durable water resistant treatment is incorporated into said outer shell such that said outer shell also maintains a spray rating of at least 80 after twenty laundry cycles.

13. A water and fire resistant fabric particularly well suited for producing protective garments for use by a fire fighter, said water resistant fabric comprising:

a woven fabric substrate, said woven fabric substrate being made from a fire resistant material; and

a durable water resistant treatment impregnated into said fabric substrate, said durable water resistant treatment being incorporated into said fabric substrate such that said fabric substrate maintains a spray rating of at least 80 after 20 laundry cycles and maintains a dynamic water absorption rating of at least 15% after ten laundry cycles.

14. A water and fire resistant fabric as defined in claim 13, wherein said durable water resistant treatment comprises a fluorocarbon polymer.

15. A water and fire resistant fabric as defined in claim 13, wherein said fire resistant material is made from a polymeric material comprising an aramid polymer.

16. A water and fire resistant fabric as defined in claim 15, wherein said polymeric material used to make said fire resistant material further comprises polybenzimidazole.

17. A water and fire resistant fabric as defined in claim 13, wherein said fabric substrate also

maintains a water absorbtion rating of at least 6% after five laundry cycles.

18. A process for producing a water resistant fabric particularly adapted for use as an exterior covering for a fire fighters protective garment, said process comprising the steps of:

5 providing a fire resistant material, said fire resistant material comprising a woven fabric, said fire resistant material being substantially free of moisture;

10 applying a durable water resistant treatment to said fire resistant material; and

15 thereafter heating said fire resistant material so as to affix said durable water resistant treatment to said material, said durable water resistant treatment being affixed to said fire resistant material such that said fire resistant material maintains a water absorption rating of at least 6% after five laundry cycles and a dynamic water absorption rating of at least 12% after ten laundry cycles.

19. A process as defined in claim 18, wherein said fire resistant material is made from yarns comprised of an aramid polymer.

20. A process as defined in claim 18, wherein said fire resistant material is made from yarns comprising a mixture of aramid polymer fibers and polybenzimidazole fibers.

21. A process as defined in claim 18, wherein said durable water resistant treatment comprises a fluorocarbon polymer.

22. A process as defined in claim 18, further comprising the steps of:

scouring said fire resistant material prior
to applying said durable water resistant treatment;
5 and

drying said scoured fire resistant material
such that said fire resistant material is
substantially free of moisture.

23. A process as defined in claim 18, wherein
said durable water resistant treatment is affixed to
said fire resistant material so that said fire
resistant material also maintains a spray rating of at
5 least 80 after twenty laundry cycles.

24. A process as defined in claim 18, wherein
said durable water resistant treatment that is applied
to said fire resistant material comprises an aqueous
solution containing a fluorocarbon polymer and an
5 alcohol.

25. A protective garment suitable for use by a
firefighter, said protective garment comprising:

an inner lining configured to cover a
predetermined portion of the wearer's body, said inner
5 lining being positioned so as to be adjacent said
wearer's body during use; and

an outer shell covering said inner lining,
said outer shell being made from a fire resistant
material, said outer shell being impregnated with a
10 durable water resistant treatment, said durable water
resistant treatment being incorporated into said outer
shell such that said outer shell maintains a spray
rating of at least 80 after 20 laundry cycles,
maintains a water absorption rating of at least 4%
15 after five laundry cycles and maintains a dynamic
water absorption rating of at least 12% after twenty
laundry cycles.

26. A protective garment as defined in claim 25,
wherein said durable water resistant treatment

comprises a fluorocarbon polymer and wherein said outer shell comprises a woven fabric.

27. A protective garment as defined in claim 25, wherein said outer shell further maintains a dynamic water absorption rating of at least 10% after ten laundry cycles.